



Calendar for the Week.

Wednesday, Jan. 18—8 p.m.—Address by Dr. Leacock, of McGill, in Convocation Hall, "What the Universities Can Do for Canada."

Friday, Jan. 20—4 p.m.—Y.M.C.A., address by Dr. Dyde, subject, "World-Peace."

4 p.m.—Y. W. C. A.

Saturday, Jan. 21—11.00 a.m.—Q.U.M.A., address by Prof. Matheson.

2.30 p.m.—Basketball.

7.30 p.m.—A.M.S.

Sunday, Jan. 22—10.00 a.m.—Prof. Morison's Bible Class.

3.00 p.m.—University Sermon, Prof. Scott.

Monday, Jan. 23—8.00 p.m.—Annual Concert of the Glee Clubs, Choral Society, Students' Orchestra, and Mandolin and Guitar Club, assisted by Mr. Arthur Blight, Baritone, of Toronto.

5.00 p.m.—Philosophical Society. Address by Prof. Dall, subject, "The Relation Between Philosophy and Theology."

Wednesday, Jan. 25—4.00 p.m.—Levana Society—Final Debate.

EXCURSION TO MONTREAL, JANUARY 27th—FARE \$3.65.

University Preachers for this Session.

January 22—Professor Scott, D.D.

29—Rev. D. J. Davidson, B.A., Dhar, India.

February 5—Professor T. Griffith Thomas, D.D., Wycliffe Col., Toronto.

12—Rev. James Carmichael, D.D., King, Ontario.

19—Rev. J. W. H. Milne, B.A., Ottawa.

26—President MacLachlan, International College, Smyrna, Turkey.

March 5—Professor C. E. Bland, B.D., Wesleyan College, Montreal.

12—Professor Dall, B.D.

April 23—Baccalaureate Sermon, Rev. S. P. Rose, D.D., Toronto.

All students are earnestly invited to attend.





A FALSE IDEA OF CULTURE.

"I do not seek a culture that separates me from my fellow men."—Tolstoi.



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No. 12.

The Philosopher's Stone.

(Continued from last issue)

BUT long before this, keen visioned men began to see the fallacy in the accepted theories of the composition of substances,—and an inductive method of investigation slowly replaced the *a priori*. Roger Bacon (1214-1284) realized that “argument shuts up the question and makes us shut it up too; but it gives no proof, nor does it remove doubt and cause the mind to rest in the conscious possession of truth, unless the truth is discovered by way of experience.” In his advocacy of the inductive method in science he anticipated his great namesake, Francis Bacon. Kunkel (1630-1702) writes:—

“I, old man that I am, occupied with chemistry for sixty years, have not yet been able to discover what is their *sulfur fixum*, and how it forms a definite part of metal.” A Boyle, in his *Sceptical Chymist* (1678), threw overboard the whole philosophical structure based upon imaginary elements, and declared:—

“It is now time to consider not of how many elements nature may compound mixed bodies, but (at least as far as the ordinary experiments of Chymists will inform us) of how many she *doth* make them up.” His idea is that the elements are to be discovered by decomposing substances until substances were obtained which could not be further decomposed. This is the modern conception of the elements. It took a hundred years to dislodge the old idea, even after Boyle's clear definition. Lavoisier's convincing statements, closed the history of the ancient theories of the composition of substances and laid the foundation for the triumphs of chemistry in the 19th century. For it is an undeniable fact that the rate of progress in discovery was enormously accelerated by the consistent use of the inductive method. But another factor quite as potent was the revival or adaptation by Dalton of the atomic theory of the Greeks. He converted it into a powerful instrument of research by using the modern definition of elements and by his discovery of certain laws of combination which enabled him to give the atoms definite *proportionate* weights. Hereafter, the atoms of the elements, and their groups, called *molecules*, became very real and constant things in the minds of chemists. Substances are definite in properties because their molecules are always the same for the same substance. Compounds are of definite composition because a molecule of any particular compound is always made up of the same atoms, which are invariable in their weights; and so on, until we have a complete theory of the composition of substances, founded on quantities exactly determined by the chemical balance.

But we are not yet done with transmutation and the Philosopher's Stone. The idea of an underlying unity,—a primal matter has never been lost sight of. The relative weights of the atoms as deduced from the proportions in which the elements combine, are many of them whole multiples of that of hydrogen, the smallest. This led to Prout's suggestion that the atoms of the elements were originally formed by the union of congeries of hydrogen atoms. But the exact investigations of Stars show that the whole-multiple relation is absent from the atomic weights of many of the elements. On the other hand Lockyer has pointed out that the hottest of the fixed stars (temperatures being judged by the character of their light) show chiefly the hydrogen spectrum, the spectra of other elements showing more clearly in stars of lower temperatures. But the predominant presence of helium, an element of atomic weight $=4$, in stars considered to be the hottest of all, seems to render Lockyer's position untenable. At present, however, we must conclude that the balance of evidence is in favour of the unity of matter and therefore of the transmutability of the elements. Dalton insisted "you cannot split an atom." Modern investigators believe that they have split atoms into a million fragments.

This leads us to the last division of our subject. In 1895 Roentgen, in the preliminary to his memorable X-ray investigation noticed that the light from a phosphorescent substance had a photographic effect even when the sensitive plate was covered with black paper, etc. A year later Becquerel obtained photographic effects from uranium compounds *even when these gave off no light; and the effect was continuous*. That is, the uranium compounds did not, like phosphorescent substances, require to be exposed to light in order to excite their activity. They had a *source of radiant energy within themselves*, not exhausted when the uranium compounds are kept in the dark for years. On July 18th, 1898, M. and Mme. Curie announced in Paris that they had isolated from the mineral source of the *uranium* compounds a new element, which they named *polonium*, and which had the photographic effect, or rather the accompanying power of rendering air a conductor of electricity. In January, 1899, they announced the discovery of another new element from the same source, and this they named *radium*. A third was later added by Debierne, and called *actinium*. These with *thorium* constitute the group of *radio active* elements. In announcing their discovery of radium the Curies stated:—

"On photographic plates we obtain good impressions with radium and polonium in half a minute; it requires several hours to obtain the same results with uranium and thorium. The radiations from radium and polonium cause a screen of barium platino-cyanide to emit a fluorescent light just as the Rontgen rays do. We thus have a continuous source of light without any source of energy other than the substance itself."

It soon developed that these wonderful substances, particularly radium, the most powerful of them, were storehouses of astonishing quantities of available energy. A thermometer placed near a solution of radium bromide

stands *continuously* 1.5 degree higher than the temperature of the air of the room. On studying for some time in a sealed glass tube a radium compound charged the apparatus so strongly with electricity that an electric spark perforated the glass when it had been slightly weakened by scratching it with a diamond. The amount of heat given off is relatively very great. An ounce of radium would give off *every hour* enough heat to raise the temperature of an ounce of water from the freezing to the boiling point. This discharge of heat goes on *continuously*. This heat is believed to be generated by the disintegration of the radium atom, atoms of other elements being formed from it. Radium itself may be a product of the transmutation of uranium and thorium. As radioactivity has been detected almost universally in the materials of the earth these substances are wide spread, but in such small amounts that radium is calculated to be only about 3-10,000ths as abundant as gold. Nevertheless its effect in maintaining the heat of the earth has been calculated to be sufficient to retard the cooling almost indefinitely. One consequence of this is to push back the age of the earth a great many million years beyond the point calculated from the rate of cooling of bodies. It has also been suggested that the heat of the sun may be maintained in the same way. Thus we get a glimpse of what infinity means.

Sir Wm. Ramsay discovered about 1896 that radium is constantly giving off a gas, or *emanation*, which when kept for several days changes in part at least into another gas, *helium*, first discovered in the sun by the astronomer Jansen in 1868. Ramsay had previously, 1895, obtained helium by heating the mineral cleveite. Here then was a direct transmutation of one element into another. But the rate is a very slow one. It has been calculated that it would take 1700 years for half of the radium to become so transmuted. As the earth is very old it seems that the radium must in its turn be in course of formation by the disintegration of some other element or elements, namely uranium and thorium.

Radium and its compounds are brilliantly luminous, shining continuously without any external source of energy. This luminosity is communicated to other bodies by the radiations from this wonderful substance, so that cotton, grass, paper, etc., shine under its influence. Diamonds become phosphorescent when placed near it, and can thus be distinguished from imitations, which are not so strongly affected.

The radium emanation and rays are powerful in causing chemical changes in substances exposed to its influence. Salt becomes calomed, paper becomes brittle, scorched, and full of holes like a collander. Ozone is produced in air through which radium is sending its rays. Solution of a radium salt is constantly evolving hydrogen and oxygen by the decomposition of water.

Radiographs can be obtained by its photographic action, just as with the X-ray machines. The difference is that the radium supplies its own energy continuously, while the X-ray tube must be kept going by a current of high tension electricity.

The skin is burned by exposure to the radions, even when glass, clothing etc., intervene. With long exposure serious injury results, so that sores are

formed which require months to heal. But by careful regulation the effects can be so moderated as to be beneficial in treatment of disease. Thus, unhealthy skin can be destroyed in such a way as to be replaced by healthy growth. In many other ways radium is coming into use in the treatment of disease. Its action is found to arrest or hinder the action of colonies of microbes. So important has this substance become that there are scientific societies the sole object of which is to investigate its properties. Its manufacture is being carried on assiduously wherever the precious minerals which contain it can be found in any quantity. *Pitchblende*, the principal source, has been known for centuries, and has been mined as a by-product for the manufacture of uranium compounds.

Sir Wm. Ramsay recently reported in the *London Times* that radium had been for the first time produced in Great Britain from British ore, the *pitchblende* of some of the Cornwall tin mines. He stated that there are not more than five grammes (74 grains) of radium in the world at present. From each ton of pure pitchblende the British Radium Co. can extract eight grains of radium. The Cornish supply of pitchblende was richer in radium than the Austrian and greater in amount than any other known in the world. "The supply of radium is thus assured. From the medical point of view alone the demand will be very great; in fact the present demand is much greater than the supply." At Karlsbad, baths containing radium water are prescribed and are found very useful in cases of rheumatism, gout, neuritis, etc. All this goes to show that radium has become a very important substance for curative purposes. As it loses only half its weight in 1700 years its use is practically continuous. Polonium, on the other hand, similar to radium in its curative powers, disappears completely after 140 days.

Sir Wm. Ramsay in referring to this wonderful substance says:—"While radium, during its spontaneous change, parts with a relatively enormous amount of energy, largely in the form of heat, it is a legitimate inference that if the atoms of ordinary elements could be made to *absorb* energy, they would undergo change of a *constructive*, and not of a disruptive nature. If, as looks probable, the action of B-rays, themselves the conveyers of enormous energy, on such matter as glass, is to build up atoms that are radioactive and consequently of high atomic weight; and if it be found that the particular matter produced depends on the elements on which the B-rays fall and to which they impart their energy,—then the transmutation of the elements no longer appears an idle dream. The Philosopher's Stone will have been discovered, and it is not beyond the bounds of possibility that it may lead to that other goal of the philosophers of the dark ages, the *elixir vitae*. For the action of living cells is also dependent on the nature and direction of the energy which they contain; and who can say that it will be impossible to control their action when the means of imparting and controlling energy shall have been investigated?"

That other dream of the ancients, a universe resulting from and composed of whirling atoms, has also come true. By the brilliant work of Zsigmondy and others with the ultra-microscope the range of vision has been extended to

take in bodies of the size of the larger molecules, and such particles have been found to be visible in certain substances. They are in motion, too, and their motions agree with the later mathematical developments of the theory.

In regarding these remarkable correspondences between the old imaginings of the great ones of the human race and the realities discovered thousands of years later one must ask "What does it mean?" Men imagine things with or without the barest suggestion from the outer world. We call them dreamers; but their dreams come true. Whence came the original idea? How did it happen to correspond with the reality discovered centuries afterwards? Is there in the human mind a counterpart of the outer world? Or are there subtle means of communication between nature and man,—ill-developed and obstructed in the ordinary man,—but becoming very perfect and effective in the most perfect men,—whose minds come closest to the mind of the infinite?

Arts' Conquest of Nature.

PROF. Ferguson's address to the Philosophical Society, on January 9th, attracted a large number of both students and professors. The speaker challenged certain theories of imitation and neo-impressionism which seemed to regard art as simple and the copy of a simple nature. Such theories denied the organic connection of human life and art. They seemed to arise from man's tendency to regard himself and external things as opposite or even hostile. It was natural for example that a savage should think of nature as a menace, from which a bare livelihood was wrested with difficulty. But any human experience transcended such an opposition. After analyzing the meaning of sympathy between men and between men and things, the speaker suggested that two stages could be detected in this process. First, it was easy to like and sympathize with those characteristics which pleased, or subserved one's own ends. Then came a higher stage when the object was appreciated for its own sake. The second stage caught up and transcended the first, and the union of the artist and his object was actually more intimate when the second state was reached. Wordsworth's poem "She Was a Phantom of Delight," was cited as an illustration. All experience lies behind any individual expression of emotion. In this connection the significance of artistic tradition was mentioned. Only gradually did the aesthetic consciousness of a people deepen, and it was a slow work to evolve symbols which would be an adequate expression of that consciousness. In the nineteenth century aspects of nature which before had seemed terrible, now appealed to something deep in man. These were no longer alien, but part of human experience.

If Indian women are called squaws, what are Indian babies called?
Squakers!

Queen's University Journal

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Editorial.

The University Charter.

THE question of altering the constitution of the University to make the institution national and free from denominational connection has reached a new stage of development recently in the distribution to graduates by the Trustees of a statement of suggested changes. In connection with this two proposed plans for changes in the constitution are submitted with the request that graduates indicate which of these they favor. Following this action on the part of the Trustees a circular has been issued by seven prominent graduates urging that the matter of expressing an opinion regarding the changes should not be neglected.

The question of altering the constitution of the University has been under consideration for several years by various governing bodies and by the General Assembly of the Presbyterian Church. The Board of Trustees, it has been generally understood, supported by a considerable majority the proposal for modification: but the assembly has been unable to endorse the idea. With a view to showing that financial support for the University could be obtained under present relations between the church and the institution, that body undertook to raise \$500,000 as an Endowment Fund. The work of collecting this was carried on vigorously for a time. The amount subscribed during a period of five years was \$305,000; and \$200,000 of this had been paid in at the time of the last report, made in May, 1910. Since the inauguration of the Endowment Fund campaign the question of changing the charter has been again before the Assembly. Still it remains unsettled constituting an element of uncertainty in plans connected with University progress.

On the whole question of the recasting of the constitution there is difference of opinion. It is held by one party that the connection between Church and University should be maintained. This view is opposed by another party which favors nationalization that appeal may be made to a wider constituency

and the different departments brought into closer relationship. These divergent views are held by members of governing bodies who are in no way differentiated by degrees of loyalty to Queen's. All obviously desire to promote her welfare and build her strong for the future. On the means of accomplishing this they are widely separated in opinion.

Up to the present nothing more definite than surmise has been available in regard to the views of graduates. It has not been clear to which view those who hold degrees from the University would lean. It is with the purpose of removing this beyond doubt that the Trustees have asked for an expression of opinion. It would appear that this step constitutes a preliminary to final settlement. On the support and active sympathy of graduates the welfare of Queen's must depend to a large extent. If, therefore, this body express an opinion it will turn the balance in one direction and probably open a way to permanent settlement of the whole question. The Board of Trustees has made no mistake in submitting to graduates the alternative plans for a change in the University constitution.

The Position of the Q.

By resolutions of the Alma Mater Society and the sanction of time the use of the Q has been restricted to designs and purposes recognized as of general University significance. The old gold Q is the award made by the Alma Mater to students who bring it honor through a high standard of achievement in athletics. The Q in different colors is bestowed from the same source on those who are members of any team participating in Intercollegiate contests. In recent years the use of the Q as a distinctive mark of recognition from the Alma Mater has been extended to designs for use in souvenirs given to members of debating teams that have won Intercollegiate honors. The significance of the Q has thus become clearly appreciated by graduates and students of the University and the fact established that it is to be used only as the Alma Mater may designate.

From time to time proposals have been made by organizations representing a limited number of students that the Q be used in some form of class pin design. These have in nearly every instance been withdrawn after action by the Alma Mater. And the Society has on several occasions re-affirmed its desire to retain the Q for general University purposes. It has thus developed that the use of the Q is a matter to be determined by the students of every department of the University through their common society. This condition while generally accepted as desirable is sometimes assailed on the ground that it is a restriction of personal rights and a selfish piece of arrogance on the part of the A.M.S. It is claimed that to devise a design of any significance or value without the use of the Q in some form is difficult. The truth of the latter contention may be recognized as a ground for depriving the Q of its present significance.

To describe the attitude of the A.M.S. towards the position of the Q as selfish is to overlook the fact that that organization represents the wishes of

the entire student body. It is student opinion that has preserved the Q for University purposes, and only an open, unqualified departure from this opinion would warrant a relaxation of the present restrictions on its use.

New Lectureship at Oxford.

Oxford University has recently broadened its course in history by providing for a lectureship on the History and Constitution of the United States. In the past colonial history has been the subject of careful and accurate teaching. From the new departure important and far-reaching results will develop. It will lead indirectly to a better understanding between the two peoples concerned, thus probably give a firmer basis to the friendship that has developed to a marked extent in recent years between two branches of Anglo-Saxon stock. In like manner the interchange of professorships which has been followed for several years between universities in America and Germany, France and other European countries has been prolific in results making for international understanding. The system of interchange is comparatively free from difficulty in operation. At intervals a member of the staff of Harvard or Yale or other American institutions is sent to lecture for a fixed period at a German institution. In return for this a German professor takes up a course of lectures in an American University.

The lecturers on the History of the United States at Oxford are to be chosen by the Hon. Jas. Bryce, the British Ambassador to the United States and the Presidents of Yale, Harvard and Princeton. This provision carries with it the assurance that the lectureship will be placed in competent hands. The scheme of interchange of professorships would appear to be one of broad value to the universities involved and to the peoples who by this means have reciprocal sympathy established to supersede misunderstanding.

Notes and Comments.

The University gymnasium gains daily in importance as a factor in the life of the students. It is the scene of steady activity of the kind that constitutes most valuable diversion. In a space of two hours every afternoon one may see at the gym. the long distance runner at the tread mill of laps forgetful of the fact that Tom Longboat holds the record, dashing basketball games, gladiatorial performances in the ring and on the mat, and almost every other form of bodily activity and dexterity that the athletic instinct can suggest.

Queen's Western Association, like other organizations, keeps itself alive and prosperous through an annual dinner. The function was held during the past week with Hon. Frank Oliver and Dr. Dyde as the principal speakers. The Minister of the Interior knows as much about the early history of development in Western Canada as anyone, for he was a factor in it from the first stages. Dr. Dyde is to take part in Western development in the future. The Q. W. A. evidently knows that dinners are made up of two parts of equal importance.

It has been suggested that during the first part of the spring term the thoughts of students turn to 'courts.' A humorist has added that the prosecutions occur regularly at the Kingston Skating Rink.

A Kingston despatch to a Toronto paper announces that Dr. Etherington, of the Medical Faculty, will retire in the spring from the position he holds at present. It is, however, indicated that nothing official or definite is known in the matter. If Dr. Etherington does retire his action will be taken to the regret of every student in Medicine. In his own faculty the Professor of Anatomy is esteemed as a most competent and vigorous teacher, a capable administrator, a frank, open-hearted friend. He is one of the men in whom every student has absolute confidence. If the feelings of Medical students were known it would be clear that without exception they hope that the reported resignation of Dr. Etherington may be without basis in fact.

Arts.

THE final year is working to produce a year book and at the present time the success of the scheme is almost assured. The members of the year have given the necessary financial support and already the committee has the project well under way. The book the committee hopes to produce should prove a very acceptable souvenir of college days at Queen's.

Arts men are pleased to learn that Burke, '12, is recovering from his severe attack of typhoid fever. At present it is hoped that he will be able to leave the hospital about the end of the week.

The curators of the Club Room have bought a fine new rug and it has been placed before the fire-place. It is unfortunate that we have not a few more; they would greatly help to make the room attractive. If there were only a fire in the grate it would give the real club room appearance which we so much desire.

We all regret that G. S. Otto, '10, is compelled to leave college for the balance of the term. George goes to his home at Elmira, Ont., but intends to write his exams in the spring in spite of his enforced absence.

The year '10 is meeting with considerable difficulty in the promotion of their memorial scheme. They had intended to erect an entrance to the college grounds on University avenue, and also to build a fence on that side of the campus. It was hoped that the years following would continue the work thus begun but the year '11 has not given the plan very hearty support as they feel the University has more serious needs than a fence about the grounds. Until the final year can advance a scheme upon which the two years can reasonably co-operate, '10 is compelled to remain active. At a meeting of the year, held on Tuesday last, the matter was referred to the committee. The year '11 should get busy.

Science.

IN the last quarterly bulletin of the Canadian Mining Institute were published the four papers which won prizes in the "Students' Competition, 1910." Two of these were written by men who have just graduated from the School of Mining. The one paper entitled, "The Use of Cobalt Oxide for Making Pigments," was written by J. J. McEachern, the other paper on "Preliminary Development Work," by Allan M. Bateman. We are proud to see our graduates winning such honours.

Grand Auction.

There will be a grand auction in the Civil Engineers' Club Room, of those windows facing the open air rink where the Ladies' Amateur Inter-year Hockey Association plays its weekly games. Auction to commence on Saturday, January 24th, at 9 a.m.

Terms:—Bids for each window may be made by groups of eight men, four of whom are to occupy the windows for ten minutes at a time. The remaining four are privileged to look over the shoulders of the occupants if any spectacular plays are made, in which case the occupants must give due warning to their less fortunate companions in the rear.

This auction will be held under the auspices of the Civil Engineers' Club, who are free to close down the sale if any undue disturbance is caused by the breaking of the aforementioned rules and regulations. However it is confidently hoped that such strenuous measures will not have to be resorted to, since petty difference of opinion will disappear as the audience beholds the wonderful exhibition of agility, celerity and hilarity.

Notice on the bulletin board of the Engineering building:—

(At 8.00 a.m.)—Mr. Wellton will not meet his classes this morning.

(At 8.05 a.m.)—Mr. Wellton will not meet his classes this morning.

(At 8.07 a.m.)—Mr. Wellton will not meet his classes this morning.

Medicine.

Professor Grant's Tribute to Medical Men.

I feel it is a very special honor to propose the toast of the medical profession, for on the whole I know no other body of men for whom I have so high a regard. To all the professions Canada owes much; but I know no profession of which so large a proportion of the members rises above the common level of humanity. We all have our "little nameless, unremembered deeds of charity and love," but I know no profession in which they are so numerous and so unnoticed. . . . But to-night, in speaking of the medical profession I wish especially to bear witness to it as a great force in education. It is my deliberate opinion, and I speak as one whose profession is education—that the well-educated medical man comes nearer than any other to the

ideal, that in him more fully than in any other are combined the claims of religion, of philosophy, of science and of literature, those strands in the rope of education, which constantly tend to become untwisted, but on whose essential inter-connection there was never more need to insist than to-day.

(Of this you have an instance in St. Luke the Evangelist, a medical man and a keen observer, a religious man, and a follower of his Master through storm and sea-wreck, a philosopher and a great artist in words. Down the ages the masters of the profession have been the same. I might speak of that great Spanish physician, the ardent scientist who first discovered the lesser or pulmonary circulation of the blood, and its purification in its passage through the lungs, and having discovered it thought its chief value was as an illustration of the nature of the Trinity, that physician, mystic, and controversialist who at last paid his life the penalty of daring to assert the freedom of religious discussion, Michael Servetus. In England you have the quaint old physician of Norwich, the man over whose book the iniquity of oblivion shall never prevail, how blindly so ever she scatter her poppy, the author of the "Religio Medici," Sir Thomas Browne. On the walls of the reading room in the British Museum are illumined the names of the ten greatest masters of the English tongue, and there, beside Milton and Shakespeare you find the name of John Locke, exile in the cause of religious toleration, enlightened reformer of education, man of letters, and member of the great medical fraternity.

I pass to our own day, and I say deliberately that the best educated man I know, in whom are combined the scientist and philosopher, the man of religious enquiry and the artist in words, is a Canadian doctor, William Osler, author of the standard work on the practice of medicine, author also of essays on *Aequanimitas*, which are the best guides to the conduct of life, not only for the young practitioner, but also for the young man of every calling; author also of an essay on immortality, in which that high theme is treated with the fine gravity and philosophic breadth which is its due.

And of such fellowship we have an honourable member here to-night in Dr. Andrew Macphail. This wise man from the East is not only a skilled student of medicine and of the history of medicine; he is editor alike of the Canadian Medical Journal and of our foremost literary magazine; his "Essays in Politics" have been well-called by an English reviewer "A Canadian *Religio Medici*"; he is equally at home in discussing Higher Criticism, the culture of the American woman, and the culture of the potato, of all which subjects I may say that his knowledge is at once experimental and profound. I do not think that any man can be the perfect physician unless he has in him a touch of the philosopher, a touch of the psychologist, and a touch of the mystic. You will find in Dr. Macphail all three; in him literature, philosophy, religion and medical skill combine to make a man of whom the Canadian medical profession may well be proud.

Mr. Chairman and gentlemen, I give you the toast of the Medical Profession, the noblest fellowship on earth, and I couple with the toast the name of Dr. Andrew Macphail.

Theology.

AT the regular meeting of the Queen's Theological Society, on Friday, January 13th, Prof. McClement gave an address upon the subject:—"Conditions Affecting Organic Progress."

Progress was defined in the strictly scientific sense, as the advance from simplicity to complexity of parts. Every student of life should be interested in the nature and activity of protoplasm. In the evolution of the material world in which we live, protoplasm is the climax of a long series of chemical changes. Man has not yet solved the chemical problem of the constituents of protoplasm, which is the only kind of matter in which life makes itself manifest. One of the most important powers with which this life-force endows protoplasm is that of assimilating other matter—and thereby increasing itself—and that of dividing itself into two or more parts each of which is of the same nature as the first.

One of the most interesting and perplexing problems facing the student of Science is to discover the origin and the nature of this life-force which so wonderfully endows matter. Three or four definitions have been suggested by scientists. These are—(1) Life is the resultant of all the chemical changes going on in protoplasm. (2) Life is the result of certain chemical changes of which we know nothing. (3) Life has been breathed into protoplasm by some source, outside of protoplasm. Prof. McClement pointed out that no one of these definitions was satisfactory, that we really know very little of the nature or origin of many forms of energy, electricity, light or life and that the theories regarding these are constantly changing.

In order that life may continue active in protoplasm, there are required the conditions of light, heat and moisture. There are two methods by which protoplasm reproduces itself. One method is illustrated in bacteria which reproduce simply by cleavage. The parent cell divides into two or more which are precisely similar to the parent. This is really a form of immortality—for each bacteria renews unchanged the characteristics of the parent. By this method there is absolute fixity of type—no differentiation being possible.

The other method, that of sexual reproduction is characteristic of all those forms which can stand the light. One of the main reasons why all the higher orders have adopted this method of reproduction is,—that they receive a variety of qualities and abilities to adapt themselves to varying conditions of life because of the variety of their ancestors. The offspring are more adaptable and plastic—and by developing these varying powers protoplasm can live under all conditions.

Prof. McClement went on to show how some forms of protoplasm developed the ability to live in the light by forming a green color, which absorbs the energy of the light. He also showed how in various plants the principle of "Division of Labor" is worked out. Somewhere in the advance from simplicity to complexity there enters the phenomenon of death.

In conclusion Prof. McClement stated as his opinion that life had begun in quiet waters, and from there had spread over all the world. The development of life through all its varied forms shows clearly that progress is a law of life.

A hearty vote of thanks was tendered to Prof. McClement for his intensely interesting and highly instructive lecture. After the close of the meeting Prof. McClement illustrated the various points in his lecture by lantern slides which were shown in the Botanical Laboratory.

The season for "trial sermons" has fairly begun. Mr. W. A. Dobson will preach in St. Andrew's church, in the evening, on Jan. 22nd.

Alumni.

THE following particulars regarding the death of Robert J. McArton, '10, which has already been mentioned in this column, will be of interest to readers of the Journal:—

Mr. McArton, accompanied by many other Queen's men, went West last April and died at Bethune, Sask., on September 10th, at the age of 22. In a football games on July 16, a heavy shoulder check on the chest caused violent attacks of hemorrhage. On leaving Carleton Place High School in '06, Mr. McArton registered at Queen's with the year '10.

In 1905, while still at the High School, "Bob" captained the football team and won the individual championship in the High School sports. At Queen's he was identified with the association football team and last season was spare for the Intercollegiate basketball team.

Always jovial and kind-hearted though slightly retiring in disposition, Mr. McArton was popular with those who knew him. He was an energetic student of good ability and by his death Queen's has lost a son of the most solid type.

Jeffrey—On Thursday, January 5th, 1911, at her late residence 215 First Ave., Toronto, Elizabeth Jeffrey, beloved wife of R. T. Jeffrey, B.Sc.

Funeral on Saturday at 2 p.m. to Smith's Falls.

The above notice appeared in The Globe. The late Mrs. Jeffrey, nee Elizabeth Cram, was a member of year '08, her husband, R. T. Jeffrey, B.Sc., a member of same year in Science. Mrs. Jeffrey was a native of Smith's Falls and Mr. Jeffrey of Elder's Mills. The Journal extends deep felt sympathy to Mr. Jeffrey in his bereavement.

C. M. Hays, B.Sc., '09, Civil Engineer, is located at Campbellford, Ont., where he has charge of the construction of a section of the Trent Valley Canal. "Charlie" is with F. S. Lazier, B.Sc., '07, another Queen's graduate of recent years.

Education.

THE second term, and we trust, for all of us, the last term, is by this time well on its way. The Christmas examinations with all their pains and aches, are past but we still, with fear and trembling, await their results, which Dean Ellis has assured us will soon be before us, but "ignorance may be bliss."

One of the teachers of the K.C.I. presented the class with a very beautiful banquet at his opening lecture, for the term, when he said that this is the best class of teachers-in-training since the opening of the Faculty here. It is therefore up to us to at least look wise, and endeavor to live up to such a reputation, and at the same time remember that "from him that receiveth much, much shall be required."

The Faculty is at present being very sorely afflicted with that "comic" disease known as mumps.

The correspondent would again like to call the attention of the students of the faculty to the fact that so far, very little material for the journal has come from the members of the class. Now little interesting events must come to your notice week by week and by reporting these you will add greatly to the interest of the "Education" column. It is most difficult for one person to get suitable material for any faculty and especially where the members are so few as they are here, but if each member would help to shoulder some of the responsibility we could, no doubt, furnish something which would be worth reading and not a bunch of arranged words. This means you.

Exchanges.

The College Student.

Under an oily reading lamp
The college student stands;
His back is suffering from a cramp,
And ink is on his hands;
And the muscles of his watery eyes
Are strong as rubber bands.

His hair is sleek, and black, and long,
His face is like the pan;
His brow is wet with a seniette:
He learns whate'er he can;
And looks the closed door in the face,
For he owes most every man.

Week in, week out, from morn till night,
You can hear the student blow;
You can hear him toss his heavy books,
With measured kick and slow,
Like the janitor ringing the lecture bell,
To summon us from below.

And fellows getting out from class,
Close the President's door.
They love to see the flaming board,
And hear the notices roar,
And catch the frightened Freshies,
And rub them on the floor.

He goes on week-days to his work,
And hears professors shout;
He takes his chair and goes to sleep,
Until he's fired out.
And then he swears with all his might,
And throws his notes about.

It sounds to him like a gramophone
Singing in a nickel show!
He needs must visit it once more,
And now's the time to go;
But he puts his hand in his pocket
And finds he has no dough.

Toiling, rejoicing, borrowing,
Onward through college he goes;
Each morning sees some task begun,
No evening sees it close;
Something attempted, nothing done,
Has earned a night's repose.

Thanks, thanks to thee, Professor wise,
For the lessons you have taught!
Thus on account of college life
Our fortunes they will rot;
But on our college desks and chairs
Our names won't be forgot.

O. B. J., Dalhousie Gazette.

Athletics.

Varsity vs Queen's.

IT was a joyous crowd that left the rink Friday night, after one of the closest and most exciting games in the history of hockey at Queen's. Before the game there had been a feeling of doubt. The hockey of the week before was pretty poor, and the pessimists were shaking their heads sadly over Queen's certain defeat.

Even throughout the game there was doubt. Varsity would score, and then Queen's, Varsity and then Queen's. Varsity was ahead at the end of the first half, and it was only towards the end of the game that Grieg George made the shot that tied the score.

Then came the ten minutes overtime, the most nerve-racking ten minutes in the evening. Our men seemed in better shape, and Varsity were only too willing to come down later and play a second game. However the rules demand the overtime, and in about three minutes Queen's had scored, and cheered on lustily by their supporters, held Varsity down till the final bell rang, and they were carried off the ice by their admirers.

There was some speculation about the team before the men stepped onto the ice, but when they finally skated forth, and Dobbie and Leo Trimble were seen, what a shout rent the air! Confidence began at last to trickle into some quaking hearts, and those who 'Cassandra like, prognosticating woe' had made the atmosphere heavy with their dolorous sighs began now to look more cheerful.

After the teams had sported with the puck a while, for the edification of the crowd, the whistle sounded and the game was on.

The play at first was a little ragged. The ice seemed sticky, and chipped readily, so that good stick handling became difficult, and combination almost impossible. There were many brilliant individual rushes, but as both teams had strong defences, they were rarely of effect.

Varsity scored first, and the lugubrious ones again began to groan in spirit, when Basil and Grieg George went up the ice together, and on a pass from Basil, Grieg scored. Pendemonium broke loose for a few minutes. Before the end of the half Varsity scored once more.

Although the score was two to one at the end of the period, Queen's had considerably the better of the play. No less than three times our men passed everybody but the goal tender, and then fell down or shot wide.

Once McKinnon had a shot from a few feet out, but it was intercepted. Meikle had another chance, but tripped, while Grieg George shot, and hit the bar at the top of the net. Credit of course must be given to the Varsity goal tender. He was cool as an ice berg. In fact it is stated on good authority that the ice was considerably harder near him than any other place.

In the second half Varsity scored but once, while Queen's twice found the net, Basil and then Grieg George doing the trick.

In the overtime period McKinnon took the puck from centre, eluded the whole Varsity team and passed to Grieg George who scored. This finished the scoring.

For Queen's Basil George was without doubt the star. He gives and takes with equal grace. His checking is by no means gentle, but it is always fair. His end to end rushes were the sensation of the game, eliciting great admiration from even his opponents.

Gilbert never played better. The Varsity forwards have wicked shots, and it was a pleasure to watch Vic. turning them aside.

Leo Trimble was the same steady, reliable player as last year. He has a deadly shot, and perhaps it would be better if he bored in a little closer to the goal before shooting. Still he has to get back to the defence quickly, and he may consider it better to shoot as he does.

Grieg at rover covers more ice than anybody else, except perhaps Dobbie. Grieg is always on hand for a pass, is a beautiful stick-handler and a good goal getter.

Dobbie, although he did not work in as well with the team as he would have, if he had been with them right along, showed that his old speed and condition have not deserted him.

Meikle and McKinnon, the two new men, more than made good. Not only did they shine in offensive work, but their back-checking saved what seemed sure goals more than once.

Altogether the team is a well-balanced one, and there is no reason why with a little more work together they should not go undefeated through the season.

The team was as follows:—Goal, Gilbert; point B. George; cover, Trimble; rover, G. George; centre, Meikle; wings, Dobson and McKinnon.

Basketball—Queen's vs Varsity.

The Varsity basketball team took ample revenge for the defeat of their hockeyists, when they walked away from our team on Saturday. The final score was 41-12, and though there was not such a disparity in play as the score would indicate, nevertheless the Varsity men had things pretty much their own way.

There seems to be a strong element of luck in the game. One day the team will go out and no matter from where they shoot will score. The next day their shots will bounce around the edge of the basket in an aggravating manner, and almost invariably fall the wrong way. So it was on Saturday. A good many times our men had open shots, but though the ball was well directed and should have gone in, only twice did our men score on regular shots. The rest of the score was made by Erskine on free throws for fouls.

On the other hand if a Varsity player got the ball within a yard of the basket, it would get in no matter what sort of a mystifying evolution it had to go through to get there. Some of their shots were taken with their backs turned, but it made no difference. They scored just the same.

Still there was a great deal that was no luck at all. Varsity played a wonderful game, and had the ball most of the time. Their forwards and centre would travel down the floor together with hard, low passes, and if they were covered, would pass out to a defence man who shot just as well. The Toronto men were on their way home from a trip through the Eastern States. They had been gone about ten days, and as they played every night, were in the pink of condition.

The American game is very rough, and that accounts for the number of fouls they made. At different times in the course of the play they smashed our men into the walls, body checked them on the floor, and generally roughed it up.

Dixon, who covered Menzies, was a particular offender, acting more than once as if he were in a wrestling bout. The officials watched the game closely however, and Varsity was usually penalized for the rough work.

It is a little hard to account for the overwhelming nature of the score against us. On ordinary occasions our men play a much better game. They seemed to be dazed by the speed of their opponents, for even when they had the ball, their passing and combination work was away off colour.

The men worked hard, but it is difficult to pick out a man who played a star game outside of the Varsity men.

Erskine at centre held his much larger opponent Gage down very well. Gage is a difficult man to check, and the few baskets he scored were gained only by very hard work. The forwards did not have much chance to shine either. They did not have possession of the ball very often, and were closely watched when it chanced to come their way. Stearne and Van Sickle were up against two forwards of the very best calibre. Brock is considered the best forward in Toronto, while Boddy is not far behind. Under the circumstances it is not remarkable that their men scored a good many points. Van played his usual smooth game, working the ball down to his forwards in faultless style, and making shots that should have gone in. Stearne played a hard game, but as yet lacks experience.

It is perhaps not our place to make suggestions, but we are forced to the belief that McCartney at defence or forward, would have strengthened the team. He knows how to handle himself, and shoots about as well as anybody in college. Perhaps if he had been on, we should have had a little larger score.

The team was as follows:—Menzies, Wardle, Erskine, Stearne, Van Sickle.

As a curtain raiser to the big game two teams of girls, known by the colors they wore as the whites and the reds, played a fast game. The whites had things pretty well their own way, and won by a good margin 10-4. We don't know whether any of the fraternity of speculators suffered or not. The reds were an all star aggregation, and before the game were considered sure winners. The whites, however, upset all the dope by their excellent work.

Prof. Malcolm made an impartial, if not over-strict referee, while Mr. Bews proved himself a very efficient umpire. The teams were:—

Whites:—Miss Nash, Miss Forster, Miss Warren, Miss R. Nash, Miss Aherne.

Reds:—Miss Chown, Miss Merry, Miss Henderson, Miss Totten, Miss McCuaig.

'12 Seniors vs '11 Seniors.

Last Thursday '12 gave the championship aspirations of '11 a solar plexus jab and then a right to the jaw. With a team composed entirely of men who have played on the Queen's senior team, they made rather a clean-up. The score was 46-20. The shooting for Eleven was not up to their regular standard, while the defence men did not sufficiently obstruct their marks when they shot. However '11 keeps hoping, and when next the teams meet, expects to put up a much harder argument, if not actually to win. The following were the teams:—

Twelve:—Menzies, Leckie, Erskine, Van Sickle, Watts.

Eleven:—Jemmett, Gilbert, Brewster, Wallace, H. Smith.

Ring and Mat.

These are lively days in the Boxing, Wrestling and Fencing Club. With February 18th all but definitely fixed as the date of the assault-at-arms comes a revival of interest. This is most in evidence among the wrestlers, to whom Mr. Bews has given two hours a week for physical instruction. Garvoek, Alyca and Foster, last year's Intercollegiate champions, are training hard, and there is some very promising new material, especially in the welter and middleweight classes.

Carmichael and McKay are fencing daily, and appear to be increasing in speed and strength.

Unfortunately in the boxing department the interest is not so keen, but it is not for lack of material. We noted in the 'Whig' last week, a reference to Elliott's work, and wonder why he is not turning out. He weighs two hundred, is as strong as a lion, while his speed and foot work is little short of marvelous in a man of his weight. Besides this, he is in the pink of condition. He would be a certain winner in the Intercollegiate, in wrestling as well as in boxing. An Intercollegiate championship, with its big 'Q' added to the laurels already won in rugby and hockey would make him easily first among the athletes of the University. There is no other heavyweight boxer so good in sight. Queen's expects "Ed." to do his duty.

Students are reminded that hockey tickets are not good if detached. At the Varsity-Queen's game several students transferred some of their tickets. In all such cases the tickets are liable to forfeiture, and the rink management will rigidly enforce this in future games.

De Nobis.

Sr. Latin student giving derivation of the word "virgin":—"Vir," a man, and "gin" a trap!

Ginger:—"I got there early and got tickets in H."

Mac.:—"I'll bet before the game is over you'll wish they were in L."

Later on—"Well, how did the game come out?"

Ginger:—"Oh it nearly resulted in a tie."

From Dramatic regions:—

Mr. H-ff, jumping to platform at Convocation Hall:—"Appreciative fair one."

"Now that's what I call a real athlete. Mr. H-ff can jump his own height."

Specialties of Some Queen's Men.

R. H. MacKinnon—"Hay" fever.

A. D. Matheson—"Carlyle's" essay on Rugby.

L. Zealand—"Stewart's" chocolates.

J. MacKinnon—Women's "Wrights."

Stan. McCuaig—"Smith's" College Chemistry.

R. McGregor—"McIntyre" on "Merritt's."

J. E. Carmichael—"Wedding Announcements."

J. S. McDonnell—"Landladies."

S. Curtain—"Senior French."

B. W. MacDougal—"May" flowers.

S. B. Laurence—Big drums.

P. L. Jull—"Hudson" Bay route.

S. H. Edgar—Pipe dream.

G. Cameron—"The Director."

Please leave all subscription books at the post office, addressed to the Business Manager.

Gymnasium Subscriptions.

Previously acknowledged, \$822.55. \$20, J. L. King, B.Sc.; \$10, Dr. Malloch; \$2, L. A. Acton. Total \$854.55.

Students are again urged to earnestly consider the claims of this most important fund. If you have an instalment due send it in. If you have not subscribed yet, fill in the following form and return to Secretary Athletic Com.

I hereby promise to pay to the Secretary-Treasurer of the Athletic Committee of A. M. S. of Queen's University, the sum of Dollars, annually for years, for the Gymnasium.

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